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PROVISIONAL INTELLIGENCE REPORT

SIGNIFICANT DEVELOPMENTS IN THE SOVIET BUILDING MATERIALS INDUSTRY 1954

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PROVISIONAL INTELLIGENCE REPORT

SIGNIFICANT DEVELOPMENTS
IN THE SOVIET BUILDING MATERIALS INDUSTRY
1954

CIA/RR PR-110
(ORR Project 47.556)

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CONTENTS

	<u>Page</u>
Summary	1
I. Introduction	2
II. Capital Investment	6
III. Precast Concrete Products Program	8
A. Benefits	8
B. Magnitude	8
C. Intended Uses	9
D. Progress of the Program	9
E. Planned Output	11
F. Organizations Involved	12
G. Implementation of the Program	14

Appendixes

Appendix A. Methodology	17
Appendix B. Source References	21

Tables

1. Percentage of Plan Fulfillment of Soviet Producers of Building Materials, 1951-54	4
2. Announced Data on Soviet Production of Cement and Brick, 1950-55	5
3. Index of Capital Investment in the Soviet Building Materials Industry, 1948-55	7

~~CONFIDENTIAL~~

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	<u>Page</u>
4. Planned Increases in Investment Expenditures and Reported Increases in Investment Volume in the Consumption Sector of the Soviet Economy, 1953-54	10
5. Planned Soviet Construction Utilizing Precast Concrete Products, 1955-56	11
6. Planned Soviet Production of Precast Concrete Products, 1954-57	12
7. Cement Production in the USSR, 1950-55	18
8. Brick Production in the USSR, 1950-55	19

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SIGNIFICANT DEVELOPMENTS
IN THE SOVIET BUILDING MATERIALS INDUSTRY*
1954

Summary

Evidence of shortcomings in the Soviet construction industry emphasizes the likelihood that investment goals in the consumer goods program will not be completely fulfilled in the Fifth Five Year Plan (1951-55). Current information obtained from statistical data printed in newspapers and journals shows some lag in construction plans. The most significant lag is a failure to fulfill planned increases in construction for housing, agriculture, and the light and food industry. This lag probably is due to the continued high priority placed on construction in the heavy industry sector of the economy. Shortcomings in the construction industry, and, to a lesser extent, in the building materials industry, have also contributed to this underfulfillment.

The level of capital investment in the building materials industry in the Fifth Five Year Plan was to be three times the level of the Fourth Five Year Plan (1946-50). To reach this level, 600 new plants were to be put into operation, and existing plants were to be improved and modernized. Announced figures on increases in capital investment in the building materials industry which were accomplished by mid-1954 indicate that fulfillment of the over-all 5-year goal of the Fifth Five Year Plan appears improbable. It is estimated that fulfillment will fall short of the goal by approximately 29 percent. Plans for production of cement, one of the key building materials, will be fulfilled by 94 to 97 percent, and plans for brick production will be substantially underfulfilled.

In order to compensate for shortages in building materials and at the same time to strengthen the construction industry, a decree was issued on 20 August 1954 which established directives and procedures for expanding the production of precast concrete products in a program

* The estimates and conclusions contained in this report represent the best judgment of ORR as of 15 February 1955.

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extending through 1957. This decree assigned specific responsibilities for implementing the program to 22 ministries and 5 major governmental organizations. Detailed assignments included such things as designing standard building plans, designing standards and specifications for the precast concrete products, and producing equipment for use in the precast concrete industry. At the same time, it is planned to increase production of precast concrete products slightly more than fivefold between 1954 and 1957. Standardized designs, simplified material inputs, savings of scarce steel and lumber, and shorter rail hauls will aid in reducing costs of building materials and improve production efficiency. Soviet prospects of achieving planned goals for the production and use of precast concrete products are unfavorable despite the probability of a priority being assigned to this industry. There have been severe lags in plant construction, and the program seems overly ambitious in the light of past Soviet experience. Equipment for these new plants will also pose a difficult problem, particularly in light of the fact that there have been severe lags in the past in equipping the comparatively few plants which have been constructed.

Fulfillment of the consumer goods program is unlikely as long as the current rates of production in such key building materials as cement and brick continue below planned levels, and all indications point to the fact that they will continue to be below planned levels throughout the Fifth Five Year Plan. It is likely that these shortages will introduce problems in planning for the balance of the Five Year Plan, which will be compounded in the next 5-year plan or bring about significant revisions downward.

I. Introduction.

In 1954 there was a general shortage of building materials in the USSR with the need particularly urgent for increased supplies of those materials necessary for the construction of housing, agricultural facilities, and new plant installations in the light and food industries. The USSR, aware of this need, issued a decree in August 1954 on the development and production of precast concrete products. Successful plan fulfillment of construction in the areas of housing, agriculture, and the light and food industry is dependent to a large extent upon the

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production of building materials and particularly upon the program for the production of precast concrete products. The importance of the production of building materials is indicated by a provision for it in the Fifth Five Year Plan. The Plan calls for an increase of at least 100 percent in the production of all building materials with specific items such as cement, brick, and slate exceeding this increase. 1/*

The building materials industry in the USSR is centered around the Ministry of the Building Materials Industry, which had 459 plants subordinate to it as of August 1953. 2/ In addition, production is also carried on by the Union-Republic Ministries of the Local and Fuel Industries, the Ministry of Housing and Civil Construction, industrial ministries, the construction ministries, and enterprises of local industry and producer cooperatives. 3/ With the exception of the Ministry of the Building Materials Industry, these organizations produce the building materials needed in performing their respective primary missions; so their desire to expand the building materials program probably would extend only as far as the immediate needs of their own organizational programs. A list of the principal producers of building materials and the percentage of plan fulfillment is given in Table 1.**

In regard to the over-all plan fulfillment of building materials production, Table 1 shows that the targets are being met satisfactorily. In considering the production of certain basic construction materials such as cement and brick, a study of Table 2*** indicates that difficulties may be experienced in attaining the planned goals of 1954 and 1955.

Cement production, in order to rise to the specified increase of 2.2 times from 1950 to 1955, must be 18.2 percent higher in 1954 than in 1953 and 18.3 percent higher in 1955 than required in 1954. 4/ The actual increase for the first 6 months of 1954 was 15 percent over the corresponding period of 1953, which indicates that the 1955 goal of 22.4 million tons may be fulfilled by 94 to 97 percent.

In order to attain the planned quantity of 2.3 times the 1950 production, brick production will have to increase by about 20 percent

* For serially numbered source references, see Appendix B.

** Table 1 follows on p. 4.

*** Table 2 follows on p. 5.

Table 1
Percentage of Plan Fulfillment of Soviet Producers of Building Materials
1951-54

	<u>1951 2/</u>	<u>1952</u>	<u>1953</u>	<u>First Six Months of 1954</u>
Ministry of the Building Materials Industry, USSR	102	99 6/	99 7/	104 8/
Ministry of the Building Materials Industry, RSFSR		98 9/	99 10/	106 11/
Producer Cooperatives	106	102 12/	103 13/	
Union-Republic Ministries of the Local and Fuel Industries	106	103 14/	104 15/	

Table 2
Announced Data on Soviet Production of Cement and Brick
1950-55 ^{a/}

	1950	1951	1952	1953	1954 Estimate	1954 Plan	1955 Fifth Five Year Plan Goal
Cement							
Percent of increase over previous year		19.0	15.0	15.0	15.0	18.2	18.3
Index	100.0	119.0	137.0	157.0	181.0	186.0	220.0
Actual (million metric tons)	10.2	12.1	14.0	16.0	18.5	19.0	22.4
Brick							
Percent of increase over previous year		20.0	19.0	12.0	13.0		27.3
Index	100.0	120.0	143.0	160.0	181.0		230.0
Actual (billion units)	9.0	10.8	12.9	14.4	16.3		20.70

a. See Appendix A, Methodology.

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in both 1954 and 1955. It has been indicated that the 1953 brick production plan was not fulfilled 16/ and that the actual increase over 1952 was only 12 percent. In the first half of 1954 the reported output was 13 percent higher than the corresponding period of 1953. In view of these reports of relatively low increases and considering the percentage increases that would be required in 1954 and 1955 to attain the Fifth Five Year Plan goal, it seems apparent that there will be a substantial underfulfillment of planned brick production.

II. Capital Investment.

The level of capital investment in the Soviet building materials industry in the Fifth Five Year Plan was to be three times the level of the Fourth Five Year Plan, according to statements in January 17/ and May 1953 18/ by two officials of the Ministry of the Building Materials Industry. In order to reach this level, 600 new plants were to be put into operation and existing plants were to be improved and modernized. 19/

Announced figures on increases in capital investment in the building materials industry accomplished to mid-1954 indicate that fulfillment of the over-all 5-year goal of the Fifth Five Year Plan appears improbable. It is estimated that fulfillment will fall short of the goal by approximately 29 percent. Developments in the Soviet building materials industry during the Fifth Five Year Plan are shown in Table 3.*

A rise of 20 percent for 1955 over 1954 has been selected as a reasonable sequence to the 9-, 8-, and 10-percent series for 1952, 1953, and 1954, respectively. It is also reasonable to assume that in each year the volume of investment in the building materials industry is generally in line with the rise in levels for the entire economy because of the dependency of increased capital construction on a relative increase in building materials production. Even after allowing for errors in assigning index numbers to those years for which complete data are not available and crediting the industry with a relatively large increase in capital investment in 1955, it can be concluded that the goal for capital investment in the building materials industry in the Fifth Five Year Plan will be underfulfilled.

* Table 3 follows on p. 7.

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Table 3
Index of Capital Investment
in the Soviet Building Materials Industry
1948-55 ^{a/}

	1948	1949	21/	1950	22/	1951	23/	b/	1952	24/	c/	1953	25/	d/	1954	26/	e/	1955	f/
Index	100	112		130		175			191			206			227			272	
Percent of increase over previous year		12		16		35			9			8			10			20	

a. Based on values in 1945 rubles. It is assumed that the ratio of investment in the building materials industry to the total capital investment in the Soviet economy remained approximately constant in the period 1946-50. Since total capital investment increased 100 percent from 1945 to 1950, 20/ the base year (1948 = 100) also represents an average for the Fourth Five Year Plan period. Percentage of probable fulfillment of the over-all Fifth Five Year Plan is obtained by comparing the average summation of the indexes of the years 1951-55 with the index average of 100 for the 1946-50 period. This comparison shows an accomplishment of 214 percent for the Fifth Five Year Plan compared to the Fourth Five Year Plan. Since the Fifth Five Year Plan called for a level of 300 percent of the Fourth Five Year Plan, fulfillment will be approximately 71 percent of the goal.

b. 135 percent of 1950.

c. 109 percent of 1951.

d. On basis of first half year, 108 percent of 1952.

e. On basis of first half year, 110 percent of 1953.

f. Assumed.

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This conclusion tends to be confirmed by criticisms, published in Soviet journals and newspapers, of delays in new plant construction, lack of modernization of existing plants, and an inadequate supply of production equipment. 27/ Available data on capital investment in the building materials industry indicate a lag that can be overcome only through the most strenuous efforts. Such an achievement is made even more difficult by the already extensive efforts to raise the over-all levels of capital investment, particularly in the consumer sector of the economy. That the Russians are going to try to expand substantially the level of capital investment with emphasis on one element of the building materials industry is indicated by a 20 August 1954 decree on the precast concrete industry, which is discussed in the following paragraphs of this report.

III. Precast Concrete Products* Program.

A decree of 20 August 1954 28/ calls for a major effort in developing the precast concrete industry of the USSR. Need for this action was probably brought about by a survey of the present and future status of the building materials industry and the construction industry.

A. Benefits.

A savings in materials and improvements in the performance of the construction industry are the major benefits stated in the decree. Considerable savings in the use of lumber and metals, as well as more efficient and economical use of cement, would be effected. According to Soviet statements, anticipated savings in construction labor on projects where precast concrete products will be used may amount to over one-third the total labor force heretofore required. The reduction in lumber and metal requirements and careful planning in location of precast products plants also will decrease the burden on the transportation system.

B. Magnitude.

Some indication of the magnitude of increases in construction and the attendant increases demanded for building materials is reflected in plans to increase investments in the consumer goods program shown

* Precast concrete products include beams, columns, and panels which are produced in plants and production yards and transported to construction sites.

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in Table 4.* The principal areas of construction in connection with the consumer goods program are housing, agriculture, and the light and food industry. Expenditures for urban housing construction were planned in 1953 at 25 percent more than the 1952 level 29/ and in 1954 at 31 percent above the actual 1953 level. 30/ Soviet leaders have indicated that stepped-up housing construction is to continue after 1954. 31/ For agriculture, capital investment allocations in 1954 are to increase 75 percent over the 1953 level. 32/ Allocations for Machine Tractor Stations (MTS's) alone are to total over 10.5 billion rubles in the years 1954-56. 33/ For the light and food industry, capital investment is to be over 80 percent higher in 1954 and 1955 than in 1952 and 1953. 34/

C. Intended Uses.

The requirement that the gains in the consumer sector of the economy were to be accomplished without any reduction in the emphasis previously placed on heavy industry has caused fulfillment of investment in construction for the several fields of the consumer sector to fall short of planned 1954 goals. This is shown in Table 4. In order to maintain a continuing emphasis on heavy industrial construction, other means had to be found to fulfill satisfactorily the current consumer goods program outlined in the decrees of late 1953. A decree published on 20 August 1954 35/ calls for a major effort in developing the precast concrete products industry as the principal means of fulfillment of the consumer goods construction program.

Precast concrete products will be used principally for housing, industrial installations, agricultural construction, bridges, and piping. The planned extent of their use is given in Table 5.**

D. Progress of the Program.

Available information on developments in the precast concrete products industry indicates that unsatisfactory progress has been made during the Fifth Five Year Plan. It is estimated that in 1950 there were 25 precast concrete products plants in the USSR with a total production in the range of 100,000 to 150,000 cubic meters. At this

* Table 4 follows on p. 10.

** Table 5 follows on p. 11.

Table 4

Planned Increases in Investment Expenditures and Reported Increases
in Investment Volume in the Consumption Sector of the Soviet Economy a/
1953-54

	Actual 1953 Expenditures (Billion Rubles)	Planned 1954 Expenditures (Billion Rubles)	Planned Percentage Increases in Expenditures b/	Actual Percentage Increases First Half 1954 36/
Housing	19.4 37/	25.5 38/	31.0	20.0
Agriculture	12.0 39/	21.0 40/	75.0	53.0
Light and food industry 41/	7.6	14.0	84.0	48.0

a. Data contained in this table have already been given and sourced earlier in the text.

b. Calculated from data in first two columns.

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Table 5

Planned Soviet Construction Utilizing Precast Concrete Products ^{42/}
1955-56

Thousand Square Meters			
<u>Year of Construction</u>	<u>Housing (Living Space)</u>	<u>Industry (Building Area)</u>	<u>Agriculture (Building Area)</u>
1955	5,300	2,813	3,230
1956	9,270	3,767	5,170
Total ^{a/}	<u>14,570</u>	<u>6,580</u>	<u>8,400</u>

a. In addition to precast concrete for the above construction, 15,400 linear meters of precast concrete bridge structurals and 3 million linear meters of reinforced concrete pipe are to be produced during the 1955-56 period.

time there were no clear-cut goals for the development of the industry, ^{43/} and available information characterizes 1950, 1951, and 1952 as a period of criticism of its performance. Major criticisms were slowness in erection of new plants, unsatisfactory production levels, indifference in the adoption of precast concrete products for use in construction, untimely preparation of construction plans, and failure to supply plant equipment when needed.

E. Planned Output.

In January 1953 it was announced that the output of precast concrete products was to be raised to 900,000 cubic meters in 1955 and that the construction of 30 new plants ^{44/} would make it possible to increase production to 16.5 times the 1950 level in 1956. ^{45/} Based on the 1950 estimated production range of 100,000 to 150,000 cubic meters, the 1956 output would range from 1.65 million to 2,475,000 cubic meters. It would appear that the decree of 20 August 1954 was announced as a result of increased emphasis on the consumer goods program, continued priority on building materials for heavy industrial construction, and unsatisfactory fulfillment of the precast concrete production program. ^{46/} This decree listed the shortcomings of previous programs and remedies therefor and listed the

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ministries and departments responsible for implementation of the new program. It also listed production goals, products to be manufactured, principal users of the products, and ministries responsible for constructing and equipping the plants necessary to fulfill the planned goals of this decree.

The planned total production of precast concrete products under the new program is shown in Table 6.

Table 6

Planned Soviet Production
of Precast Concrete Products 47/
1954-57

<u>Year</u>	<u>Planned Production (Thousand Cubic Meters)</u>
1954	1,860
1955	3,515
1956	6,085
1957	9,790

In order to achieve this production, 402 factories and 200 production yards are to be built during 1955 and 1956. Capital investment in the precast concrete products industry is to be increased by 330 million rubles in 1954; total capital investment in the precast concrete products industry is planned at 1.725 billion rubles in 1955 and 2.160 billion rubles in 1956.

F. Organizations Involved.

Twenty-two ministries and 5 other major organizations will participate in the program, according to the decree of 20 August 1954. 48/ The broadcast role will be played by the State Committee for Construction Affairs of the Council of Ministers, USSR, which will have the responsibility of overseeing the implementation of the decree and of reporting on its progress to the Party's Central Committee and to the Council of Ministers, USSR.

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The five ministries that will be most deeply involved in the program are the Ministry of the Building Materials Industry, the Ministry of the Construction of Metallurgical and Chemical Industry Enterprises, the Ministry of Construction, the Ministry of Construction and Road Machine Building, and the Ministry of Ferrous Metallurgy.

The Ministry of the Building Materials Industry will receive the major share of increased capital investment funds in 1954 and probably a very large share of the total investments for the 2 following years. It is called upon to do research in improvement of materials, help work out specifications for products, help on the design of producing plants, submit a proposal for improving the utilization of existing plants, work on the improvement of production equipment, and perform several other assignments.

The Ministry of the Construction of Metallurgical and Chemical Industry Enterprises is to receive additional funds for new plants this year to help in the designing of precast products plants, draw up designs for standard 1-, 3-, and 5-story buildings which will utilize precast concrete products, contribute to the publication of instructions on the use of precast concrete, and perform several other assignments.

The Ministry of Construction is to participate in the accelerated investment plan for 1954, both in connection with construction for the Ministry of the Building Materials Industry and the Ministry of Construction and Road Machine Building and with the construction of plants for its own trusts, and it will participate in a limited number of assignments mentioned for the Ministry of the Building Materials Industry and the Ministry of the Construction of Metallurgical and Chemical Industry Enterprises.

The Ministry of Construction and Road Machine Building is to enlarge or remodel 5 of its plants for the manufacture of equipment for precast concrete plants and will assist 10 other ministries on problems of equipment design and manufacture.

The Ministry of Ferrous Metallurgy is to produce 70,000 metric tons of reinforcing wire in 1955 and 150,000 metric tons in 1956. It is also to prepare for the production of an unspecified amount of wire rods.

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Most of the 21 ministries involved in the capital investment program for precast concrete products will build precast plants for the use of their own construction organizations. Almost all the ministries that have their own construction organizations are listed as participants. The list includes the Ministry of the Aviation Industry, the Ministry of the Defense Industry, the Ministry of Defense, and the MVD. The Ministry of Ferrous Metallurgy, the Ministry of the Chemical Industry, and several of the machine-building ministries were not included, probably because the major share of their construction requirements are contracted out to the Ministry of Construction and the Ministry of the Construction of Metallurgical and Chemical Industry Enterprises.

Of the 11 ministries participating in the designing and manufacture of technological equipment for precast concrete production, 5 are in the capital goods field, and 2 are in the field of defense industry. The leading role in the manufacture of equipment will be played by the Ministry of Construction and Road Machine Building. The two organizations in the field of defense industry are the Ministry of the Shipbuilding Industry and the Ministry of the Defense Industry.

G. Implementation of the Program.

A survey of the precast concrete products program up to the issuance of the August 1954 decree indicated that during the Fifth Five Year Plan considerable, although unsatisfactory, progress had been made in terms of new plants and increases in total production. It also indicated that serious difficulties were encountered in the construction of new plants, organization of the comparatively new industry, and promotion of the use of its products in construction. Cognizance of these and other shortcomings in this industry is demonstrated by the amount of space in the August 1954 decree devoted to criticisms of its performance. With the aim of eliminating the lag in the development of production and the use of precast concrete products in housing, industrial, and agricultural construction, 27 regulations were decreed by the Central Committee and the Soviet Council of Ministers on 20 August 1954. 49/

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1. Favorable Factors.

Three factors favorable to the precast concrete products program are (a) strong backing of the Party and of the Council of Ministers; (b) close connection between the success of the precast concrete program and the success of the Soviet consumer sector program; and (c) the possible savings of materials, manpower, time in construction, and the reduction of transportation requirements.

2. Unfavorable Factors.

A summary of Soviet experience indicates a rate of progress in putting new plants into operation and a utilization of precast concrete products that has enabled them to show considerable progress in absolute terms, but, relative to the requirements of the newly announced decree, this past performance appears to be inadequate. The construction of such a large number of plants and production yards may be delayed by the lack of standard plans which are to be drawn, approved, and published by February 1955. It has also been directed that further research be done to determine the most suitable precast concrete manufacturing equipment to be installed in the new plants. Since this task must be accomplished in a relatively short time, it is unlikely that it will be completed as scheduled. Difficulties may be encountered in adequately supplying component materials such as reinforcing, aggregates, and high-quality cement, 50/ since numerous complaints have appeared in the press in regard to the supply of these components in the previous program which was much smaller. 51/

3. Prospects for Fulfillment.

Based on the strong backing of the Party and government and the emphasis placed in the closely related consumer sector program, great efforts will be made to fulfill this ambitious program. The very rapid increase in rate of expansion, however, will be very difficult to maintain, particularly in view of the fact that many drastic changes in policy, planning, and supply are immediately necessary. Underfulfillment can be expected during 1954 and 1955, but, with the continued strong interest and assignment of high priority, fulfillment may be achieved by early 1957.

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APPENDIX A

METHODOLOGY

The figures for the yearly increase in the USSR in production of cement, the index of production, and the actual production are shown in Table 7.*

The cement production figure fixed by the Fourth Five Year Plan was fulfilled by 97 percent. 52/ Output of brick and tile did not fully reach the Fourth Five Year Plan goal. 53/

It is inferred from the failure to state the explicit degree of underfulfillment of the Five Year Plan goal for brick that the target was missed by a substantial margin. Since the cement plan was announced as 97 percent fulfilled, it is inferred that the underfulfillment for brick was greater than 3 percent.

It is impossible to state the exact degree of underfulfillment. Arbitrarily a figure of 6.5 percent is selected.

Planned production for 1950 was 9.6 billion units. 54/ Output in 1950 is then assumed to be 0.935×9.6 billion, or approximately 9 billion units.

Table 8** shows the yearly rate of increase in the production of brick, an index of brick production, and the estimates of brick production.

* Table 7 follows on p. 18.

** Table 8 follows on p. 19.

Table 7
Cement Production in the USSR
1950-55

Year	Percentage Increase over Preceding Year <u>55/</u>	Index of Output (1950 = 100) <u>a/</u>	Output <u>56/</u> (Million Metric Tons)
1950		100	10.2
1951	19	119	12.1
1952	15	137	14.0
1953	15	157	16.0
1954 (estimate)	15	181	18.5
1954 (plan)	18.2	186	19.0
1955 (plan)	120 <u>b/</u>	220	22.4

a. Calculated from yearly increase.
b. Increase over 1950.

Table 8
Brick Production in the USSR
1950-55

Year	Percentage Increase over Preceding Year	Index of Output (1950 = 100)	Output (Billion Units) ^{a/}
1950		100	9.0
1951	20 <u>57/</u>	120	10.8
1952	19 <u>58/</u>	143	12.9
1953	12 <u>59/</u>	160	14.4
1954 (estimate)	13 <u>60/</u>	181	16.3
1955 (plan)		230 <u>61/</u>	20.7

a. Calculated from 1950 figure of 9 billion units.

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APPENDIX B

SOURCE REFERENCES

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Much of the material used in this report was taken from reports of [REDACTED] the Foreign Documents Division, CIA/OO. For purposes of greater clarity, the original sources were used as references. The sources listed are evaluated RR 2 unless otherwise indicated.

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A - Completely reliable	2 - Probably true
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D - Not usually reliable	5 - Probably false
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